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REMARKS

Claims 1-15 are pending in the present Application. Claims 1- 6, 8, and 12 have been amended and Claim 15 has been canceled, leaving Claims 1-14 for further consideration. Paragraph [0006] and [0007] have been amended and paragraph [0008] has been cancelled to incorporate the changes effected in the claims. Support for the amendment to Claims 1, 5, 6, 8, and 12 can be found at least in paragraph numbers [0011] to [0012]. No new matter has been introduced by these amendments.

Reconsideration and allowance of all pending claims are respectfully requested in view of the above amendments and following remarks.

Claim Rejections under 35 U.S.C § 112

The rejection of Claims 5 and 6 stand rejected under 35 U.S.C § 112, fourth paragraph, as failing to further limit parent claim 4 has been rendered moot in view of the amendments thereto. Applicants thank the Examiner for noting the typographical error in the claim number dependency.

Accordingly, the rejection is requested to be withdrawn.

Claim Rejections under 35 U.S.C § 102

1. Claims 1, 3-11, and 15 stand rejected under 35 U.S.C § 102 (b) as being anticipated by GB 1,108,584 of in view of USP 3,029,294. Applicants respectfully traverse.

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988).

The Office Action refers to GB 1,108,584 in view of USP 3,029,294 as providing support for the anticipation rejection. In particular, the Examiner states “[a]s seen from USP 3,029,294 these impurities are present in the phenol obtained by the same method that was used by GB 1,108,584 to obtain phenol to be further purified in the examples. The claimed process step is the same as shown in the examples of GB 1,108,584.”

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GB 1,108,584 fails to anticipate Applicants' Claim 1 because the reference discloses an additional step of heating the phenol fraction with water or steam in contact with or prior to the contact with a cation exchange resin as recited in page 2 lines 11-17. It is noted that Applicants' process is a one-step process where the phenol produced in the decomposition reaction is directly contacted with an acidic ion exchange resin without being subjected to water or steam treatment as in the case of GB 1,108,584. Accordingly, GB 1,108,584 fails to anticipate the Applicants' claimed invention. Likewise, it is noted that the process outlined in USP 3,029,294 subjects the phenol to an additional step of heat treatment to convert the alpha hydroxy compounds to higher boiling compounds by way of reaction with phenol, and then subjects the heat-treated phenol to further distillation techniques. In both cited patents, phenol is subjected to at least two distinct steps e.g., a heat treatment step and a purification step while the Applicants Claim 1 features a single step for the purification of phenol.

Accordingly, the rejection is requested to be withdrawn.

2. Claims 1-7 and 9-15 stand rejected under 35 U.S.C § 102 (b) as being anticipated by GB 1,381,398.

In GB 1,381,398, the phenol obtained from the cumene hydroperoxide cleavage reaction is subjected twice to the treatment with an ion exchange resin to obtain a purified phenol product. As such, the disclosed purification process requires two steps. In contrast, the Applicant's claimed invention involves a one-step process wherein the phenol obtained by the decomposition of the cumene hydroperoxide is subjected to an acidic ion exchange resin. Further, it is noted that there is a requirement for the phenol to be substantially anhydrous when the phenol is subjected to the second treatment with the ion exchange resin.

Accordingly, the rejection is requested to be withdrawn for at least these reasons.

3. Claims 1-5, 7-11 and 15 stand rejected under 35 U.S.C § 102 (b) as being anticipated by USP 6,388,144.

In USP 6,388,144, the phenol used as the starting material to reduce MBF is pre-treated to have an acetol (at times also referred to as hydroxyacetone) content of < 1 ppm. Again, this is an additional process step not featured in Applicants' claims. It is to be noted that the

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Applicant's claimed invention has no additional steps apart from contacting the phenol feedstream with an acidic ion exchange resin at a temperature of 50°C to 100°C to concurrently reduce the initial concentration of the hydroxyacetone and the methylbenzofuran in the phenol feedstream to produce a purified phenol feedstream.

Accordingly the rejection is requested to be withdrawn for at least these reasons.

4. Claims 1 and 3-15 stand rejected under 35 U.S.C § 102 (b) as being anticipated by US 6,489,519.

Applicants respectfully assert that the cited reference discloses numerous preliminary steps (see US 6,489,519, Col. 6, ll. 36-62) required in the disclosed purification process. Applicants claimed invention does not involve any preliminary steps and the phenol obtained by the cleavage of cumene hydroperoxide is directly treated with an ion exchange resin to provide purified phenol.

Accordingly the rejection is requested to be withdrawn for at least these reasons.

5. Claims 1-11 and 15 are rejected under 35 U.S.C 102 (b) as being anticipated by USP 5,414,154. Applicants respectfully traverse.

The Examiner cites USP 5,414,154 for the disclosure provided in Tables I, III and Examples 1, 3. USP 5,414,154 also advocates a two-step process for the purification of phenol and requires the acetol content to be below a particular level in order to achieve a reduction in the amount of MBF. In contrast the Applicants claimed invention is directed to a one-step process where the phenol is purified by the concurrent reduction of acetol and MBF, irrespective of the initial amount of acetol in the phenol obtained by the cleavage of cumene hydroperoxide.

Accordingly, Applicants respectfully request that the rejection be withdrawn.

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Claims rejected under 35 U.S.C § 103 (a)

1. Claims 1-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over GB 1,108,584 in view of USP 3,029294. Applicants respectfully traverse.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

For reasons discussed above, both GB 1,108,584 and USP 3,029294 include preliminary treatment steps where the phenol is subjected to water/steam treatment before being subjected to the purification step. It is noted that the Applicants process is a one-step process where the phenol produced in the decomposition reaction is directly contacted with an acidic ion exchange resin without being subjected to any preliminary treatment step.

Accordingly, the rejection is requested to be withdrawn.

2. Claims 1-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over GB 1,381,398. Applicants respectfully traverse.

For reasons similar to that discussed above, Applicants Claims are patentably distinguished from the process outlined in GB 1,381,398 since the phenol obtained from the cumene hydroperoxide cleavage reaction in the cited patent is subjected twice to treatment with an ion exchange resin Amberlyst 15 to obtain a purified phenol as described. Thus, the cited references teaches and suggests the use of multiple steps.

Accordingly, the rejection is requested to be withdrawn.

3. Claims 1-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over USP 6,489,519. Applicants respectfully traverse.

USP 6,489,519 fails to establish a prima facie case of obviousness because this reference teaches and suggests multiple steps. In particular, USP 6,489,519 subjects the phenol obtained from the cumene hydroperoxide cleavage reaction to a pretreatment to reduce the level of acetol

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and then subjects the feedstream to a purification step to reduce the amount of MBF. As previously noted, Applicants claimed process is a one step process. Moreover, it is noted that the reference does not teach the concurrent reduction of both acetol and MBF as claimed by Applicants. Rather, acetol is first reduced followed by a reduction of MBF.

Accordingly, the rejection is requested to be withdrawn.

4. Claims 1-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over USP 5,414,154. Applicants respectfully traverse.

As previously discussed, USP 5,414,154 teaches and suggests a multi-step process for the purification of phenol and requires the acetol content to be below a particular level for the reduction of MBF. In contrast, the Applicants claimed process is directed to a one-step process for purifying phenol obtained from the cleavage of cumene hydroxide by subjecting the phenol to an acidic ion exchange resin and concurrently reducing acetol and MBF.

Accordingly, the rejection is requested to be withdrawn for at least these reasons.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and place the application in condition for immediate allowance, which action is earnestly solicited.

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If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862.

Respectfully submitted,

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